REMARKS/ARGUMENTS

Claims 1-7 and 12-33, now stand in the present application, claims 1, 6, 7, 12, 13 and 14 having been amended, claims 8-11 having been canceled and new claims 17-33 having been added. Reconsideration and favorable action is respectfully requested in view of the above amendments and the following remarks.

In the Office Action, the Examiner has noted certain guidelines for illustrating the preferred layout for the specification of a utility application. As noted above, Applicant has amended the specification in order to include pertinent headings.

The Examiner has also rejected claims 1-16 under 35 U.S.C. § 102(e) as being anticipated by Baiada. In view of the above-described claim amendments, the Examiner's § 102(e) rejection of the claims is believed to have been overcome, as will be described in greater detail below.

Description of Claim Amendments:

Applicant has amended independent claims 1 and 13 to cover one of two categories of embodiments of the present invention. New independent claims 17 and 24 have been added to cover the other of the two categories of embodiments. The two categories of embodiments respectively are the (preferred) "deterministic" embodiments, which is described at page 5 to page 11 of the present specification, and the alternative "probabilistic" embodiments, which are described from the final paragraph of page 11 to page 12 of the present specification.

Independent method claim 1 thus relates only to the "deterministic" embodiments, while independent method claim 17 relates to the "probabilistic" embodiments. Corresponding "apparatus" claims relating to the two categories of

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embodiment are amended independent claim 13 (deterministic) and newly added

independent claim 24 (probabilistic).

In addition, the terminology and wording of the amended and newly added

independent claims has been clarified to avoid possible confusion as to whether the

"*vehicle most recently allocated a place*" in the sequence was being referred to as "*a*

candidate vehicle" or not. From the specification as a whole, and in particular the final

paragraph of page 6 and the first paragraph of page 10 (as originally-filed), it is clear

that data relating to vehicles already in the "static set" are not processed in the same

way as data relating to vehicles in the "dynamic set." A possible (but incorrect)

interpretation of the original wording could result in a meaningless comparison of data

concerning the "vehicle most recently allocated a place" with itself. It is thus clear that

the "vehicle most recently allocated a place" should not be referred to as a "candidate

vehicle," and the claim wording of all relevant claims has been changed accordingly.

In addition, step (ii) of claim 1 previously referred to "*calculating a value to be*

attributed to said candidate vehicle...", but it was decided that this was likely to cause

confusion in view of original claims 6 and 7 (and newly added dependent claims 22 and

23), and page 6 of the description as originally filed, which clearly indicate that

according to preferred embodiments, two or more such values ("I" and "D" in the

preferred embodiments) may be attributed to each candidate vehicle, one of which may

be representative of the interval that would have to be maintained between a candidate

vehicle and the vehicle most recently allocated a place in the sequence if that candidate

vehicle were allocated the next place in the sequence, and the other of which may be

representative of the delay that would be experienced by a candidate vehicle if that

candidate vehicle were allocated the next place in the sequence. While the phrase "*calculating a value...*" was not incorrect, as at least one value must be calculated and attributed, the independent claims now require that "*at least one value*" is calculated in order to correspond more clearly with the dependent claims referred to above and the description of the embodiments. The wording of the dependent claims has also been amended in the light of this where applicable.

Step (iii) of originally filed independent claims 1 and 8, stated that steps (i) and (ii) were repeated for each of the candidate vehicles. It will be understood that after these two steps have been performed the first time (in steps (i) and (ii)) in respect of "one of said candidate vehicles," these steps are then performed in respect of each of the other candidate vehicles, rather than "repeated" in respect of all of the candidate vehicles (including the one in respect of which steps (i) and (ii) have already been performed). Step (iii) in each of the amended and newly added independent claims has therefore been corrected in order to state this clearly and unambiguously.

Each of the independent claims further includes a "wherein" clause, which is believed to clearly patentably define each of the present claims over Baiada. More particularly, the wherein clauses recite the manner in which the "selecting" is performed, which is not believed to be taught or suggested by Baiada.

For example, claim 1 (directed to the "deterministic" embodiments), now requires that the selecting step comprises:

> wherein the step of selecting one of said candidate vehicles comprises:

> calculating a cost in respect of each of said candidate vehicles, the cost calculated in respect of each candidate

vehicle being dependent on each of the at least one value
attributed to that candidate vehicle;

performing a comparison of the cost calculated in
respect of each candidate vehicle with costs calculated in
respect of each of the other candidate vehicles; and

selecting a candidate vehicle in dependence on said
costs.

Support for this claim limitation can be found, in particular, from page 6, line 12 to page

7, line 17 of the present specification, which explains that "I" and "D" are used to

calculate a "cost" according to a cost function, and from page 8, line 28 to page 9, line 3

of the present specification, which explains that the cost calculated in respect of one

candidate vehicle is compared with costs calculated in respect of other candidate

vehicles, and that the selecting of a candidate vehicle is then done in dependence on

the costs. A similar amendment has been made to corresponding apparatus claim 13.

Since Baiada does not teach or suggest the above described claim limitation,

independent claims 1 and 13 and their respective dependent claims 2-7, 28, 30, 32 and

14-16 are believed to patentably define over the cited reference.

Newly added claim 17 (the "probabilistic" embodiment), requires that the

selecting step comprises:

wherein the step of selecting one of said candidate
vehicles comprises:

calculating a cost in respect of each of said candidate
vehicles, the cost calculated in respect of each candidate
vehicle being dependent on each of the at least one value
attributed to that candidate vehicle;

calculating a relative cost in respect of each of said
candidate vehicles, the relative cost for a candidate vehicle
being dependent on the cost calculated in respect of that

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> candidate vehicle and on the sum of the costs calculated in respect of each of the candidate vehicles; and
>
> selecting a candidate vehicle in such a way that the probability of a particular candidate vehicle being selected is dependent on the relative cost calculated for that candidate vehicle.

Support for this claim limitation can be found from page 11, line 30 to page 12, line 16 of the present specification, which relates specifically to this embodiment. Corresponding new apparatus claim 24 has a similar claim limitation.

Since Baiada does not teach or suggest the above described claim limitation, independent claims 17 and 24 and their respective dependent claims 18-23, 29, 31, 33 and 25-27 are also believed to patentably define over the cited reference.

In claim 6 (and new claim 22), the word "interval" has been used instead of the word "spacing." This brings the claim language into line with that used in the present specification at page 6, line 6 onwards. Newly added dependent claims 28 and 29 specify the relationship between the cost for a candidate vehicle and the appropriate interval for that candidate vehicle. These newly added claims are supported at page 6, lines 22 to 27 of the present specification.

Newly added dependent claims 30 and 31 specify the relationship between the cost for a candidate vehicle and the delay that would be experienced by that candidate vehicle if it were allocated the next place in the sequence. These additional claims are also supported at page 6, lines 22 to 27 of the present specification.

Newly added claims 32 and 33 relate to the exemplary cost function referred to as equation (1) on page 6.

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Patentability Arguments:

In Applicant's invention "cost" is a metric that, according to either category of embodiments, is something that is calculated individually for each of the candidate vehicles under consideration, and is <u>dependent on the value or values attributed to that candidate vehicle</u>. After the step of "*calculating a cost...*", the two categories of embodiments differ slightly, but with the same eventual aim of **selecting a candidate vehicle in dependence on a metric calculated in respect of that vehicle**, <u>rather than in dependence purely on a characteristic of a whole sequence or set of aircraft</u>, as taught by Baiada.

More specifically, with embodiments according to the "deterministic" category of embodiments, the method and apparatus continues with a <u>comparison of the costs calculated in respect of each vehicle</u>, the selection being made in dependence thereon.

With embodiments according to the "probabilistic" category of embodiments, no "comparison" step is necessary. Instead, a "relative cost" is calculated in respect of each of the candidate vehicles, this being dependent <u>not only</u> on the cost calculated in respect of that candidate vehicle <u>but also</u> on the sum of the costs calculated in respect of each of the candidate vehicles (see the equations and explanation at the top of page 12 of the present specification). The "selecting" step is then performed in such a way that the probability of a particular candidate vehicle being selected is <u>dependent on the relative cost calculated for that candidate vehicle</u>. Thus, without directly "comparing" the respective costs (as is done according to "deterministic" embodiments), the probability of a particular vehicle being selected is still made dependent on a metric calculated <u>in respect of that vehicle</u>, rather than in dependence purely on a

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characteristic of a whole sequence or set of aircraft. (The relative costs of other vehicles do of course affect the probability of selection indirectly, as they all influence the size of the sum – it is by virtue of this that embodiments according to the "probabilistic" category are able to take account of relative costs of other vehicles while not performing a direct "comparison" step.)

In Baiada a "goal function" is computed, but this is a single value for a complete, already sequenced "set of aircraft," rather than a metric to be calculated individually for each of the vehicles in the set. This is explained in particular at column 13, line 32 to column 14, line 46 of Baiada. Similarly, in column 3, lines 46-57 of Baiada, comparison is made between the total distance (i.e., 40 miles) of the arrival sequence of ten aircraft in a first order (i.e., alternating large and small aircraft) with the total distance (i.e., 30 miles) of the arrival sequence of the same ten aircraft in a different order (i.e., the five small aircraft, then the five large aircraft). Thus in Baiada, the "goal function" is computed in order to allow comparison of one complete sequence of the aircraft in the set against other complete sequences of the aircraft in the set. The result is that the system in Baiada selects the best complete sequence of all the aircraft in the set currently under consideration. Thus, Baiada clearly does not teach or suggest Applicant's inventions as defined by the present claims which require selecting a candidate vehicle to be allocated in the next place of a sequence in dependence of cost.

Therefore, in view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all of claims 1-7 and 13-33, now standing in the application be allowed and that the case be passed to issue. If there are any other issues remaining which the Examiner believes could be resolved through
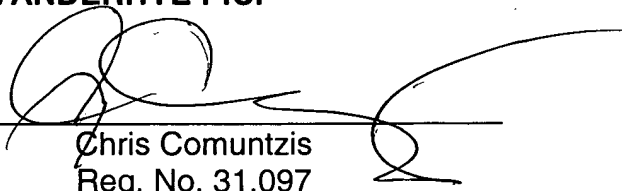
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either a supplemental response or an Examiner's amendment, the Examiner is

respectfully requested to contact the undersigned at the local telephone exchange

indicated below.

Respectfully submitted,

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